

AMENDMENTS TO THE CLAIMS

Please amend Claim 31 and cancel Claims 34-35. Please add new Claims 36-38.

1. (Previously Presented) A process comprising the steps:
 - (i) hydrolysis of lactose to produce glucose and galactose;
 - (ii) partial isomerisation of the glucose to fructose; and
 - (iii) partial oxidation of the glucose to gluconic acid;to produce a composition comprising a mixture of galactose, glucose, fructose, gluconic acid, unconverted lactose and non-lactose di- and oligo-saccharides.
2. (Original) A process as claimed in claim 1 for the production of a composition comprising a mixture of approximately 10-50% galactose, 0-48% glucose, 1-25% fructose, 1-48% gluconic acid and 0-25% unconverted lactose and non-lactose di- and oligo-saccharides as a % of the total carbohydrate present.
3. (Original) A process as claimed in claim 2, wherein the composition comprises 30-50% galactose, 10-40% glucose, 5-25% fructose, 1-15% gluconic acid and 1-10% unconverted lactose and non-lactose di- and oligo-saccharides.
4. (Original) A process as claimed in claim 3, wherein the composition comprises 45-50% galactose, 23-33% glucose, 15-23% fructose, 1-5% gluconic acid and less than 7% unconverted lactose and non-lactose di- and oligo-saccharides.
5. (Previously Presented) A process as claimed in claim 1 carried out as a continuous, semicontinuous, batch, sequence batch or single-pot process.
6. (Original) A process as claimed in claim 1, wherein the isomerisation step (ii) is carried out after the oxidation step (iii).
7. (Original) A process as claimed in claim 1, wherein the hydrolysis step (i) and oxidation step (iii) are carried out simultaneously.
8. (Previously Presented) A process as claimed in claim 1, wherein the product of step (i) is separated into three streams wherein the first stream is not treated further and the second and third streams are treated according to steps (ii) and (iii) respectively and the products of each stream combined to provide a final composition comprising a mixture of approximately 10-50% galactose, 0-48% glucose, 1-25% fructose, 1-48% gluconic acid and 0-

25% unconverted lactose and non-lactose di- and oligo-saccharides as a % of the total carbohydrate present.

9. (Previously Presented) A process as claimed in claim 8, wherein the product of the partial isomerisation step (ii) is split and a portion subjected to partial oxidation (step (iii)) and the remainder combined with the product of the partial oxidation step to produce a composition comprising a mixture of approximately 10-50% galactose, 0-48% glucose, 1-25% fructose, 1-48% gluconic acid and 0-25% unconverted lactose and non-lactose di- and oligo-saccharides as a % of the total carbohydrate present.

10. (Previously Presented) A process as claimed in claim 8, wherein the product of the partial oxidation step (iii) is split and a portion subjected to partial isomerisation (step (ii)) and the remainder combined with the product of the partial isomerisation step to produce a composition comprising a mixture of approximately 10-50% galactose, 0-48% glucose, 1-25% fructose, 1-48% gluconic acid and 0-25% unconverted lactose and non-lactose di- and oligo-saccharides as a % of the total carbohydrate present.

11. (Previously Presented) A process as claimed in claim 1, wherein the lactose source is selected from the group comprising milk; UF permeate derived from whole milk, skim milk, whey or milk serum; pure lactose; whey; deproteinated whey; demineralised whey; decalcified whey; UF permeate derived from deproteinised, demineralised or decalcified whey; or any combination thereof.

12. (Original) A process as claimed in claim 1, wherein the hydrolysis step (i) is achieved chemically, or enzymatically using one or more hydrolytic enzymes, or in a bioreactor.

13. (Original) A process as claimed in claim 12 wherein the hydrolysis step (i) is achieved chemically by the use of acids or strong cation exchange resins.

14. (Original) A process as claimed in claim 13, wherein the acids comprise a weak solution (0.001-0.1% of total weight of lactose) of one or more acids selected from hydrochloric acid, sulphuric acid, phosphoric acid, nitric acid and citric acid.

15. (Original) A process as claimed in claim 12, wherein the hydrolytic enzyme is a beta-galactosidase, also known as lactase, and is free or immobilized and is sourced from *Kluyveromyces lactis*, *Kluyveromyces fragilis*, *Kluyveromyces marxianus*, *Saccharomyces fragilis*, *Streptococcus thermophilus*, *Aspergillus oryzae*, *Aspergillus niger*, *Lactobacillus*

bulgaricus, *Lactobacillus helveticus*, *Lactobacillus salivarius*, *Lactobacillus fermentum*, *Lactobacillus casei*, *Lactobacillus acidophilus*, *Streptococcus lactis*, *Bifidobacterium bifidum*, *Bifidobacterium longum*, *Bifidobacterium adolescentis*, *Bifidobacterium breve*, *Bacillus subtilis*, *Escherichia coli*, *Sulfolobus* species, *Pyrococcus fusiosus*, green coffee beans, jack beans, bovine liver, and bovine testes and any other suitable source either alone or in combination.

16. (Original) A process as claimed in claim 15 wherein the enzyme is sourced from *Sulfolobus solfataricus*.

17. (Original) A process as claimed in claim 1, wherein the isomerisation step (ii) is achieved enzymatically, using glucose isomerase.

18. (Original) A process as claimed in claim 17, wherein said glucose isomerase is free or immobilized and is sourced from *Actinoplanes missiouriensis*, *Bacillus coagulans*, *Streptomyces murinus*, *Escherichia coli* or *Arthrobacter* species, or any other suitable source either alone or in combination.

19. (Previously Presented) A process as claimed in claim 1, wherein the oxidation step (iii) is achieved enzymatically using a glucose oxidase and a catalase.

20. (Original) A process as claimed in claim 19, wherein said enzymes are free or immobilized, and wherein the oxidase enzyme is sourced from *Penicillium notatum*, *Penicillium glaucanum*, *Penicillium amagosakiense* and *Aspergillus niger*, and the catalase enzyme is sourced from *Aspergillus niger*, one or more *Pencillium* species and *Micrococcus lysodeikticus*, or wherein said enzymes are obtained from any other suitable source either alone or in combination.

21. (Previously Presented) A composition produced by the process of claim 1, wherein said composition comprises a mixture of galactose, glucose, fructose, gluconic acid and unconverted lactose and non-lactose di- oligo-saccharides.

22. (Original) A composition as claimed in claim 21, wherein, in an undiluted form, the composition is in the form of syrup of 40 to 80° Brix.

23. (Original) A composition as claimed in claim 22 further comprising a diluent.

24. (Previously Presented) A composition comprising approximately 10-50% galactose, 0-48% glucose, 1-25% fructose, 1-48% gluconic acid and 0-25% unconverted lactose and non-lactose di- and oligo-saccharides as a % of the total carbohydrate present.

25. (Original) A composition as claimed in claim 24 comprising 30-50% galactose, 10-40% glucose, 5-25% fructose, 1-15% gluconic acid and 1-10% unconverted lactose and non-lactose di- and oligo-saccharides.

26. (Original) A composition as claimed in claim 25, comprising 45-50% galactose, 23-33% glucose, 15-23% fructose, 1-5% gluconic acid and less than 7% unconverted lactose and non-lactose di- and oligo-saccharides.

27. (Previously Presented) A food comprising a composition as claimed in claim 24.

28. (Original) A food as claimed in claim 27, comprising a sports energy bar.

29. (Previously Presented) A drink comprising a composition as claimed in claim 24.

30. (Original) A drink as claimed in claim 29, comprising a sports drink, wherein said sports drink contains less than 25 mmol/litre of sodium.

31. (Currently Amended) The process of Claim 1, further comprising: A process for the production of galactose comprising the steps:

- (i) ~~hydrolysis of lactose to produce glucose and galactose;~~
- (ii) ~~partial isomerisation of the glucose to fructose;~~
- (iii) ~~partial oxidation of the glucose to gluconic acid;~~
- (iv) crystallization of galactose to produce a mother liquor; and
- (v) recovery of galactose crystals from the mother liquor.

32. (Original) Galactose produced by the process of claim 31.

33. (Original) A composition comprising the mother liquor produced by the process of claim 31.

34. (Canceled)

35. (Canceled)

36. (New) The method of Claim 31, further comprising recovering the mother liquor and using the recovered mother liquor to sweeten a food product.

37. (New) The method of Claim 36, wherein the food product is a dairy food product.

38. (New) The method of Claim 2, further comprising adding the composition to a food product.